on the beach. Should the beach be impenetrable or the average cone index exceed 600, the beach will be tilled to a depth of 36 inches.

The Service has reviewed the information relative to sea turtle activity on Anastasia Island and has evaluated the impact this project will have nesting turtles. Based on our review, the Service believes this project is not likely to jeopardize the continued existence of the loggerhead, green or leatherback sea turtles.

INCIDENTAL TAKE

Piping Plover and West Indian Manatee.

In meeting the provisions for incidental take in Section 7(b)(4) of the Act, the Service has reviewed the Biological Opinion and other available information relevant to this permit action. Based on our review, incidental take is not anticipated for either species. If an incident involving either species occurs, all work shall cease and our office contacted immediately (904-232-2580)

Loggerhead, Green and Leatherback Sea Turtles

Section 9 of the Endangered Species Act, as amended (Act), prohibits the taking of listed species without a special exemption. Taking is defined as to mean harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or to attempt to engage in any such conduct. "Harm" and "harass" are further defined in Service regulations (50 CFR 17.3). "Harass" is defined as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns, which include, but are not limited to, breeding, feeding or sheltering. "Harm" is defined as an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

Under the terms of Section 7(b)(4) and 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement. The measures described below are nondiscretionary, and must be implemented by the agency so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in Section 7(o)(2) to apply.

The Federal agency has a continuing responsibility to regulate the activity that is covered by this incidental take statement. If the agency fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that

are added to the permit or grant document, the protective coverage of Section 7(o)(2) may lapse.

The Service has reviewed the biological information for these species, consultants, and other available information relevant to this action. Based on our review incidental take is anticipated for all turtle nests that are missed by a nest relocation program within the project boundary, for failed nesting attempts as a result of the potential formation of an escarpment or sand compaction and for all failed nesting attempts as a result of the disposal operation.

When providing an incidental take statement the Service is required to give reasonable and prudent measures it considers necessary or appropriate to minimize the take along with terms and conditions that must be complied with to implement the reasonable and prudent measures. Furthermore, the Service must also specify procedures to be used to handle or dispose of any individuals taken. The Service believes the following reasonable and prudent measures are necessary and appropriate
to reduce take:

1. If the project commences during the sea turtle nesting season (April 1 through October 30) then the applicant will initiate a sea turtle nest relocation program 60 days prior to work or April 1, whichever is sooner, within the project area.

2. Nourished beaches will be tilled if sand compaction occurs.

3. Corrective action on the beach will be initiated if an escarpment develops which inhibits turtles from nesting.

4. Only beach quality sand suitable for sea turtle nesting, successful incubation and hatchling emergence shall be used on the project site.

To implement the above reasonable and prudent measures, the Service has outlined the following terms and conditions for incidental take. In accordance with the Interagency Cooperation Regulation (50 CFR 402), these terms and conditions must be complied with to implement the reasonable and prudent measures for incidental take:

1. The applicant will initiate a sea turtle nest relocation program within the project area. Only those nests which will be affected by construction activities are required to be relocated. Turtle monitoring activities shall include performance of daily visual inspections of the beach at sunrise by personnel with prior experience and training in nest survey and relocation and procedures, pursuant to Rule 16R-1, F.A.C., permitted by the DEP. Any nest discovered shall be relocated between sunrise and 0900 hours each day to a nearby self-release beach site, in a secure setting where artificial lighting will not interfere with hatchling orientation.

Relocation site(s) shall be approved by DEP prior to use, and may include a non-beach hatchery if appropriate. If necessary, self releasing screen or aboveground individual cages shall be used on relocated nests to exclude predators. Nest relocation activity will cease upon completion of the beach nourishment activity.

2. Nourished beaches will be tilled if compaction occurs. Compaction will be monitored immediately prior to the sea turtle nesting season (April 1). A minimum of 30 compaction measurement stations will be established along the nesting area of the beach, above mean high water to the base of the primary dune. At each measurement station, sand compaction measurements will be taken at 6, 12, and 18 inches depths. Measurement stations will be systematically distributed along the beach to provide coverage for the nourished beach. If the average of the 30 measurement stations for one or more of the depth profiles exceeds 500 cone penetrometer units (cpu), the beach will be tilled to a depth of 36 inches before the onset of the sea turtle nesting season. Compaction will be monitored for three years after project completion. The Jacksonville Field Office shall be provided with an annual report of the beach compaction testing.

3. During the marine turtle nesting season (April 1 to October 30), construction pipes which are placed on the beach shall be placed perpendicular to the shoreline. Temporary storage of pipes and equipment shall be off the beach to the maximum extent possible or as far landward as possible without compromising the integrity of the dune system if temporary storage on the beach is necessary.

4. During the sea turtle nesting season (April 1 to October 30), all lighting associated with the project shall be limited to the immediate area of active construction only. Such lighting shall be the minimal lighting necessary to comply with safety requirements, and shall incorporate reduced wattage, downlight, special fixtures and screens to minimize illumination of the nesting beach and nearshore waters. Lighting on offshore equipment shall be minimized through reduction, shielding, lowering, and appropriate placement of lights to avoid excessive illumination of the water, while meeting Coast Guard requirements. Shielded low pressure sodium vapor lights are highly recommended for all lights on the beach or on offshore equipment that cannot be eliminated.

5. The applicant shall monitor the nourished beach in order to detect if an escarpment or beach compaction are forming for three years after project completion. If an escarpment forms or if the nesting beach becomes compacted, the applicant shall take corrective action to remove the escarpment. An annual report shall be submitted to the Service on October 1 for each of the three years the study is in progress.

If an escarpment greater than 12 inches high, longer than 30 yards, and with an average compaction exceeding 500 cpu forms prior to the sea turtle nesting season, the applicant shall level the escarpment prior to the nesting season. Alternatively, the applicant may arrange for the Service to visit the project site immediately prior to the nesting season. If the Service determines that the escarpment may hinder nesting turtles, the applicant will level the escarpment immediately.

If an escarpment develops during the turtle nesting season, corrective action will take place only during daylight hours. The applicant should contact the Jacksonville Field Office (904/232-2580) for further coordination prior to work in order to avoid impacting turtle nests.

6. The material deposited on the beach must meet DEP standards for beach quality sand which is suitable for sea turtle nesting, successful incubation and hatchling emergence.

7. The applicant shall arrange a meeting with the contractor, the Service and the DEP 90 days prior to beginning work on this project. This will allow agencies to explain the turtle protection measures to the contractor.

8. A report describing the actions taken to implement the terms and conditions will be submitted to this office within 60 days of completion of the proposed work for each year when activity has occurred. This report will include dates of actual construction activities, names and qualifications of personnel involved in nest surveys and relocation activities, descriptions and location of hatcheries, nest survey and relocation results and hatching success of nests.

9. In the event a turtle nest is dug up during beach construction activities, the DEP permitted individual responsible for nest relocation on the project should be notified for removal of the nest to the beach hatchery.

CONSERVATION RECOMMENDATIONS

Conservation recommendations are suggestions of the Service regarding discretionary measures to reduce or avoid adverse effects of a proposed action on listed species. Conservation recommendations may also include suggestions on ways for the Federal agency to meet its responsibility to conserve listed species under Section 7(a)(1) of the Act.

We recommend that a three-year study be implemented to assess impacts on nesting and hatching success. The design of the study should be coordinated with the Service and DEP.

Anastasia Island Beach Mouse

SEE INTRODUCTORY EXPLANATION OF INCIDENTAL TAKE PROVIDED UNDER THE "LOGGERHEAD, GREEN AND LEATHERBACK SEA TURTLES" INCIDENTAL TAKE STATEMENT.

The Service has reviewed the biological information for this species, and other available information relevant to this action. Based on our review incidental take is anticipated for all Anastasia Island beach mice that may be found at the toe of the primary dune within the beach disposal area.

When providing an incidental take statement the Service is required to give reasonable and prudent measures it considers necessary or appropriate to minimize the take along with terms and conditions that must be complied with to implement the reasonable and prudent measures. Furthermore, the Service must also specify procedures to be used to handle or dispose of any individuals taken. The Service believes the following reasonable and prudent measures are necessary and appropriate to reduce take:

1. The Corps shall instruct the contractor to prohibit mechanized equipment from the primary or secondary dune systems. Mechanized equipment is permitted only up to the toe of the primary dune.

2. The Corps will require the contractor to initiate a trapping program to remove Anastasia Island beach mice that may be affected by the beach disposal operation.

To implement the above reasonable and prudent measures, the Service has outlined the following terms and conditions for incidental take. In accordance with the Interagency Cooperation Regulation (50 CFR 402), these terms and conditions must be complied with to implement the reasonable and prudent measures for incidental take:

1. The contractor shall contract with a qualified and permitted biologist to carry out the trapping program. The biologist should contact the Park Manager at Anastasia State Recreational Area before he traps on state land.

2. The trapping effort will be directed to only that section of beach which will be impacted within a 24-hour period. The trapping program for that particular reach of beach will begin 5 days before material is deposited on site, and will conclude the morning of sand disposal. If there is a delay in sand disposal, trapping will continue until the work occurs.

3. Two traps will be placed at each Anastasia Island beach mouse burrow. Captured beach mice will be relocated to either the primary or secondary dune within a section of beach that had previously been nourished.

4. A report summarizing the number of trap nights and the number of beach mice capture and relocated will be submitted to the Corps and Service three weeks after project completion.

5. If a dead beach mouse is found or one dies in the trap, the specimen should be frozen and the Jacksonville Field Office contacted within 24 hours (904-232-2580).

This concludes Section 7 consultation, in accordance with the Act. If modifications are made in the project, or if new information becomes available on listed species, reinitiation of consultation may be necessary.

6.0 Bibliography

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Feasibility Report With Environmental Impact Statement for Beach Erosion Control. Nassau County, Florida (Amelia Island). 1985. U. S. Army Corps of Engineers, Jacksonville District.

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Florida Department of Natural Resources. Florida Marine Research Institute. 1992. 1992 Florida Index Nesting Beach survey Data. 2 pp.

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TABLE 1 BIRDS IDENTIFIED IN ANASTASIA STATE RECREATION AREA

Gulls and Terns

Glaucous gull	*Larus hyperboreus*
Great black-backed gull	*Larus marinus*
Herring gull	*Larus argentatus*
Ring-billed gull	*Larus delawarensis*
Laughing gull	*Larus atricilla*
Bonaparte's gull	*Larus philadelphia*
Common tern	*Sterna hirundo*
Roseate tern	*Sterna dougallii*
Least tern	*Sterna albifrons*
Forster's tern	*Sterna forsteri*
Sandwich tern	*Thalasseus sandvicensis*
Gull-billed tern	*Gelochelidon nilotica*
Royal tern	*Thalasseus maximus*
Caspian tern	*Hydroprogne caspia*
Black tern	*Chlidonias niger*
Black skimmer	*Rynchops nigra*

Plovers

Black-bellied plover	*Squatarola squatarola*
Piping plover	*Charadrius melodus*
Semipalmated plover	*Charadrius semipalmatus*
Wilson's plover	*Charadrius wilsonia*
Killdeer	*Charadrius vociferus*

Pelicans

Brown pelican	*Pelecanus occidentalis*

Gannets

Northern gannet	*Morus bassanus*

Sandpipers

Spotted sandpiper	*Actitis macularia*
Western sandpiper	*Ereunetes mauri*
Stilt sandpiper	*Micropalama himantopus*
Semipalmated sandpiper	*Ereunetes pusillus*
Least sandpiper	*Erolia minutilla*
Willet	*Catoptrophorus semipalmatus*
Ruddy turnstone	*Arenaria interpres*
Red knot	*Calidris canutus*
Dunlin	*Erolia alpina*
Sanderling	*Crocethia alba*
Short-billed dowitcher	*Limnodromus griseus*
Common snipe	*Capella gallinago*
Marbled godwit	*Limosa fedoa*
Greater yellowlegs	*Totanus melanoleucus*
Long-billed curlew	*Numenius americanus*
Whimbrel	*Numenius phaeopus*

Oystercatchers

American oystercatcher	*Haematopus palliatus*

Loons

Common loon	*Gavia immer*

Grebes

Horned grebe	*Podiceps auritus*
Pied-billed grebe	*Podilymbus podiceps*

Cormorants

Double-crested cormorant	*Phalacrocorax auritus*

Raptors

Northern harrier	*Circus cyaneus*
Osprey	*Pandion haliaetus*
American kestrel	*Falco sparverius*
Red-tailed hawk	*Buteo jamaicensis*
Red-shoulder hawk	*Buteo lineatus*

TABLE 2. SURF ZONE FISH, ANASTASIA STATE RECREATION AREA

dotter filefish	(*Aluterus heudeloti)*
striped anchovy	(*Anchoa hepsetus*)
bay anchovy	(*Anchoa mitchilli*)
yellowfin menhaden	(*Brevoortia smithi*)
Atlantic menhaden	(*Brevoortia tyrannu*)
white mullet	(*Mugil curema*)
crevalle jack	(*Caranx hippos*)
longnose killifish	(*Fundulus similis*)
scaled sardine	(*Harengula jaquana*)
bluefish	(*Pomatomus saltatrix*)
spot	(*Leiostomus zanthurus*)
Gulf kingfish	(*Menticirrhus littoralis*)
planehead filefish	(*Monacanthus hispidus*)
southern puffer	(*Sphoeroides nephelus*)
chain pipefish	(*Syngnathus louisianae*)
Florida pompano	(*Trachinotus carolinus*)
permit	(*Trachinotus falcatus*)

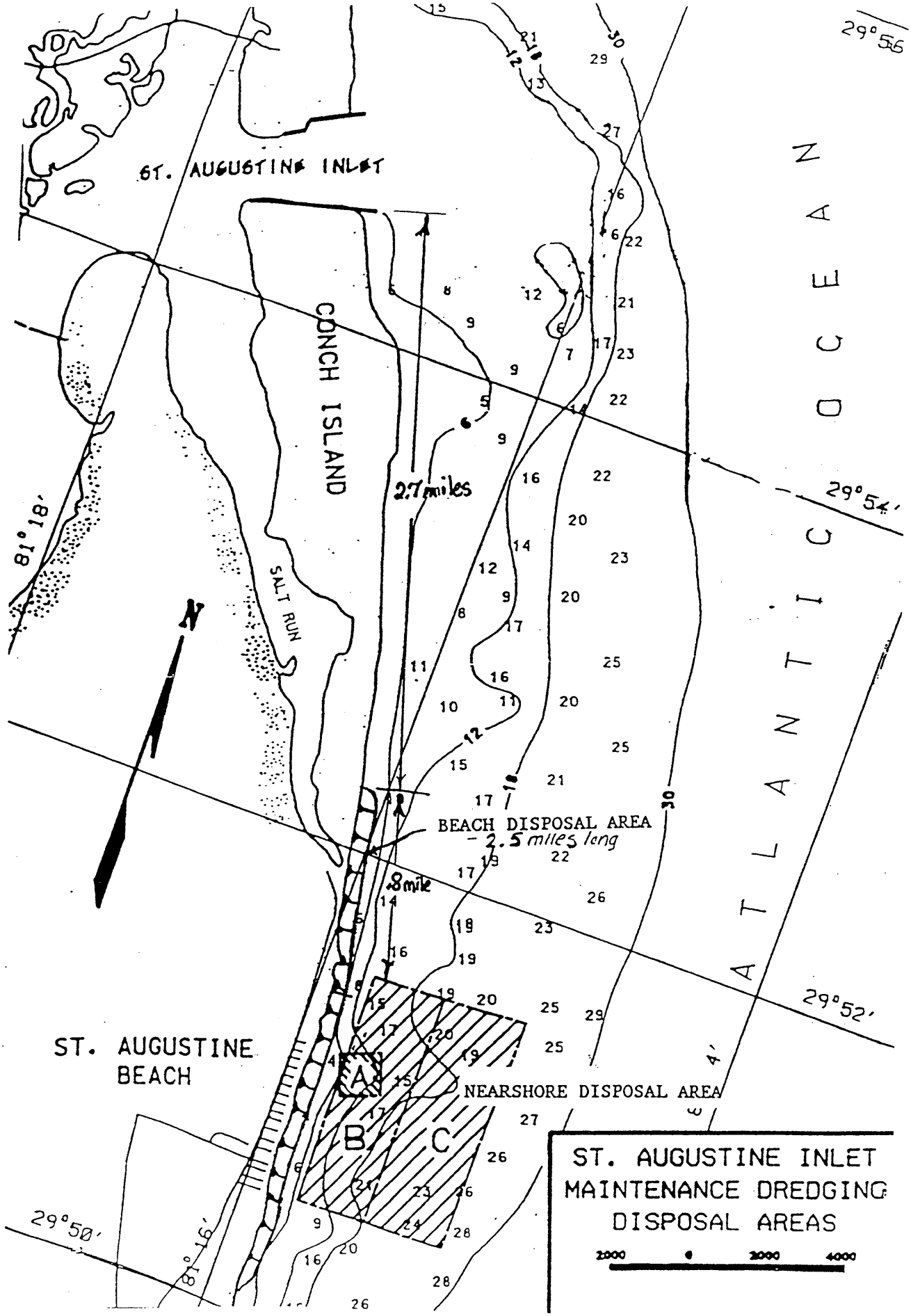
ST. AUGUSTINE INLET
CONCH ISLAND
SALT RUN
2.7 miles
BEACH DISPOSAL AREA
- 2.5 miles long
.8 mile
NEARSHORE DISPOSAL AREA
ST. AUGUSTINE BEACH
A
B
C
ATLANTIC OCEAN
29°56'
29°54'
29°52'
29°50'
81°18'
81°16'
N
ST. AUGUSTINE INLET
MAINTENANCE DREDGING
DISPOSAL AREAS
2000
0
2000
4000

FIGURE 1

United States Department of the Interior

FISH AND WILDLIFE SERVICE
6620 Southpoint Drive, South
Suite 310
Jacksonville, Florida 32216-0912

DEC 07 1994

Colonel Terry L. Rice
District Engineer
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

Attn: Planning Division

Dear Colonel Rice:

In accordance with the Fiscal Year 1994 Transfer Fund Agreement between the Fish and Wildlife Service and the Jacksonville District Corps of Engineers, this letter transmits the Final Coordination Act Report and Biological Opinion on the proposed St. Augustine Inlet Section 933 Study, St. Johns County, Florida.

The Corps requested an evaluation of the environmental effects of maintenance dredging the St. Augustine Inlet and deposition of the material in either an near-shore disposal site or on the beach on Anastasia Island.

The Florida Game and Fresh Water Fish Commission and Department of Environmental Protection, Division of Recreation and Parks, reviewed the draft report and provided comments. Their comments have been included in the final report.

If you have a question, please contact Don Palmer in this office.

Sincerely yours,

Michael M. Bentzien

Michael M. Bentzien
Assistant Field Supervisor

cc
Paul Crawford
Park Manager
Anastasia State Recreational Area
Florida Department of Environmental Protection
1340-A A1A South
St. Augustine, Florida 32085

Brad Hartman-FGC-Tallahassee

ST. JOHNS COUNTY
SHORE PROTECTION PROJECT

Fish and Wildlife
Coordination Act Report

FINAL REPORT

Submitted to:
Department of the Army
Jacksonville District Corps of Engineers
Planning Division, Environmental Branch
Jacksonville, Florida

Submitted by:
Department of the Interior
U. S. Fish and Wildlife Service
Ecological Services
Jacksonville, Florida

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Figure 14. The south end of the project site, Fleeman Tract. Suitable Anastasia Island beach mouse habitat

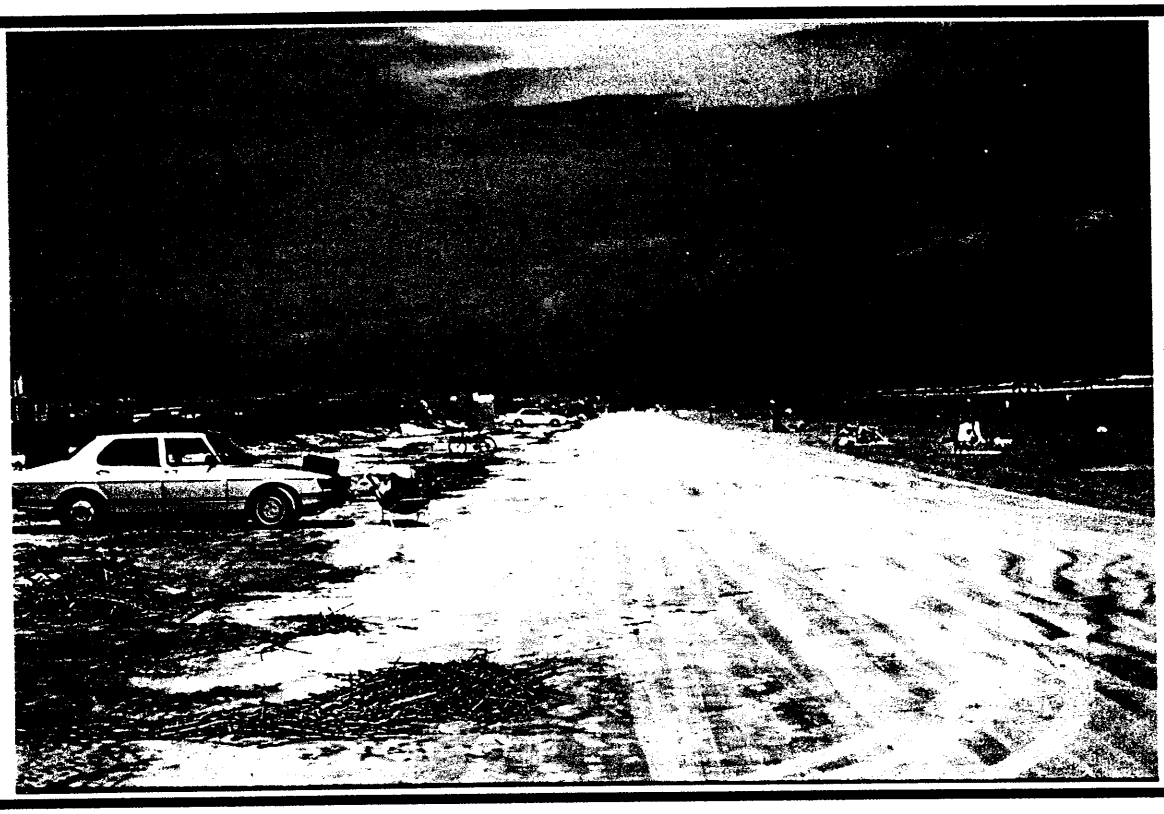

Figure 13. Disposal site looking north, low tide. Notice tire tracks indicating heavy vehicle traffic. Vehicles are parked in suitable turtle nesting habitat.

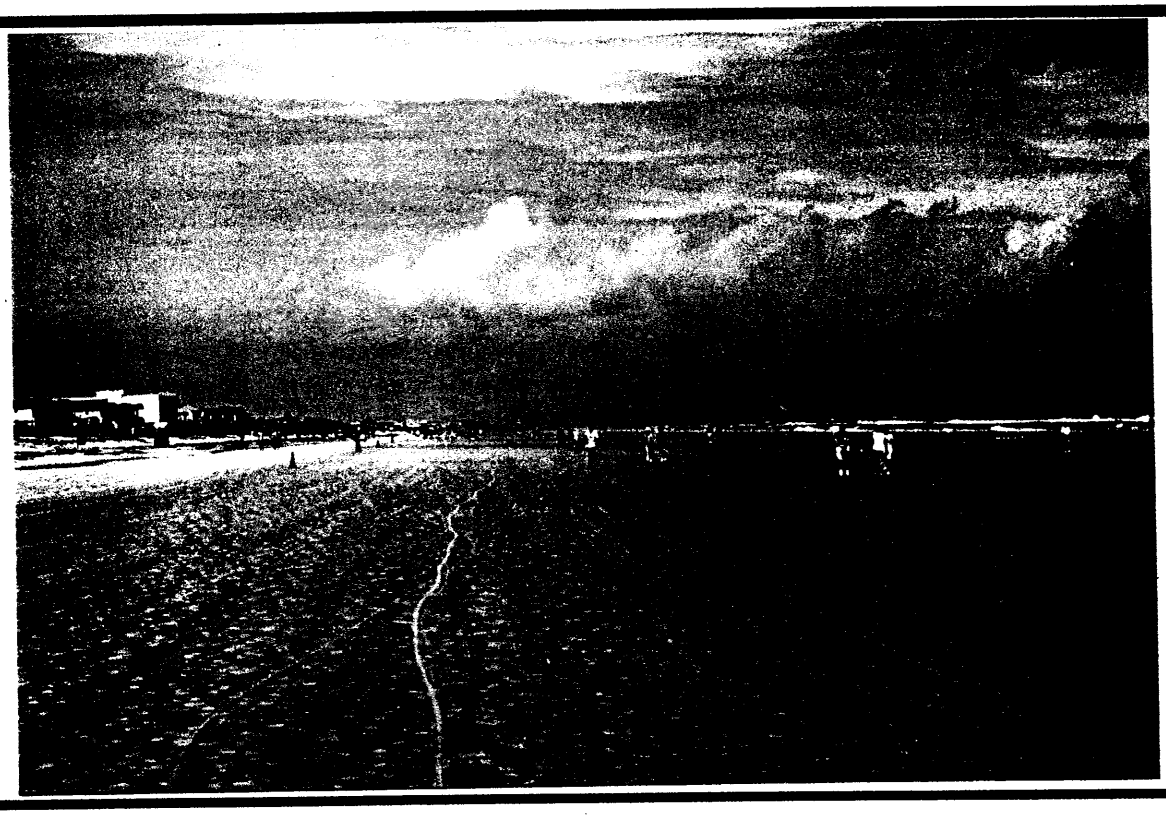

Figure 12. Disposal site looking north, low tide.

Figure 11. Disposal site looking south, low tide. Notice the high tide line up close to the toe of the primary dune. This reach of beach is heavily used by vehicles.

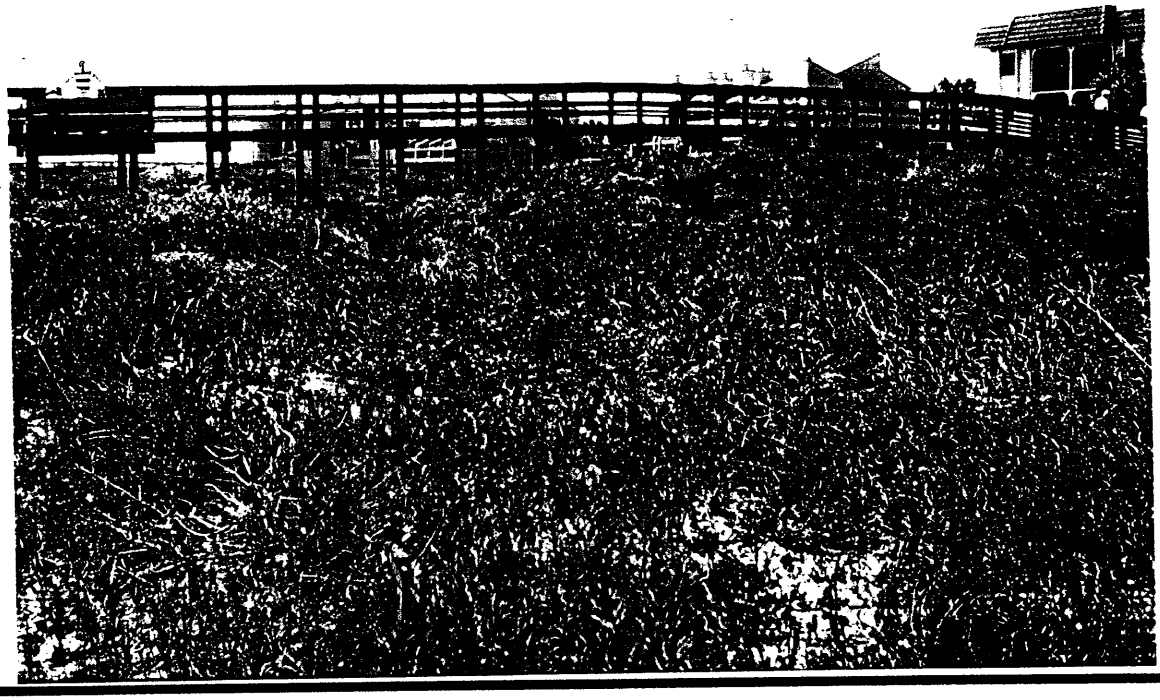

Figure 10. Further south in the project area. A swale between the primary and secondary dune. This is suitable Anastasia Island beach mouse habitat.

Figure 9. Exposed beach armament at low tide covered with green algae (*Enteromorpha sp.*). The rocks provide a susbstrate for numerous invertebrates. After Beach nourishment, this substrate will be buried.